CLAIMS

Sult/

- 1. A multi-layered structure for fabricating an ohmic electrode, comprising a non-single crystal semiconductor layer and a film including at least a metal nitride film which are sequentially stacked on a III-V compound semiconductor body.
- 2. The multi-layered structure for fabricating an ohmic electrode according to claim 1 wherein said III-V compound semiconductor body comprises GaAs, AlGaAs or InGaAs.
- 3. The multi-layered structure for fabricating an ohmic electrode according to claim 1 wherein said non-single crystal semiconductor layer is a non-single crystal $In_xGa_{1-x}As$ (0 < x \leq 1) layer.

That I

- 4. The multi-layered structure for fabricating an ohmic electrode according to claim 1 wherein said film comprises a metal film and a metal nitride film provided on said metal film.
- 5. The multi-layered structure for fabricating an ohmic electrode according to claim 4 wherein a refractory metal film is further provided on said metal nitride film.

Subs

The multi-layered structure for fabricating an ohmic electrode according to claim 5 wherein a metal film for wiring is farther provided on said refractory metal film.



- 7. The multi-layered structure for fabricating an ohmic electrode according to claim 4 wherein said metal film is a Ni film, a co film or an Al film, and said metal nitride film is a WM film, a WSiN film, a TaN film, a TaSiN film, a TiN film, a TiSiN film or a TiON film.
- 8. The multi-layered structure for fabricating an ohmic electrode according to claim 5 wherein said refractory metal film is a W film, a Ta film or a Mo film.



9. A multi-layered structure for fabricating an ohmic electrode, comprising a non-single crystal semiconductor layer and a film including at least a metal nitride film which are sequentially stacked on a III-V compound semiconductor body,

the energy barrier between said non-single crystal semiconductor layer and said film being lower than the energy barrier between said III-V compound semiconductor body and said film.

- 10. An ohmic electrode obtained by annealing a multi-layered structure for fabricating an ohmic electrode, comprising a con-single crystal semiconductor layer and a film including at least a metal nitride film which are sequentially stacked on a III-V compound semiconductor body.
- 11. The ohmic electrode according to claim 10 wherein the annealing temperature of said multi-layered structure for fabricating an ohmic electrode is 500°C to 600°C.
- 12. The ohmic electrode according to claim 10 obtained by annealing said multi-layered structure for fabricating an ohmic electrode in which said III-V compound semiconductor body comprises GaAs, AlGaAs or InGaAs.
- 13. The ohmic electrode according to claim 10 obtained by annealing said multi-layered structure for fabricating an ohmic electrode in which said non-single crystal semiconductor layer is a non-single crystal InxGa:-xAs $(0 < x \le 1)$ layer.
- 14. The ohmic electrode according to claim 10 obtained by annealing said multi-layered structure for fabricating an ohmic electrode in which said film

comprises a metal film and a metal nitride film provided on said metal film.

15. The ohmic electrode according to claim 14 obtained by annealing said multi-layered structure for fabricating an ohmic electrode in which a refractory metal film is further provided on said metal nitride film.

Sully

16. The ohmic electrode according to claim 15 obtained by annealing said multi-layered structure for fabricating an ohmic electrode in which a metal film for wiring is provided on said refractory metal film.

Short

- 17. The ohmic electrode according to claim 14 obtained by annealing said multi-layered structure for fabricating an ohmic electrode in which said metal film is a Ni film, a Co film or an Al film, and said metal nitride film is a WN film, a WSiN film, a WSiN film, a TaN film, a TaSiN film, a TiN film, a TiSiN film or a TiON film.
- 18. The ohmic electrode according to claim 15 obtained by annealing said multi-layered structure for fabricating an ohmic electrode in which said refractory metal film is a W film, a Ta film or a Mo film.

Sulty/

19. An ohmic electrode provided on a III-V compound semiconductor body obtained by annealing a multi-layered structure for fabricating an ohmic electrode, comprising a non-single crystal semiconductor layer and affilm including at least a metal nitride film,

the energy barrier between said non-single crystal semiconductor layer and said film being lower than the energy barrier between said III-V compound semiconductor body and said film.